

THE ASTROPHYSICAL JOURNAL  
CONTENTS OF VOLUME 384, PART 1

1992 JANUARY 1, Number 1

	Page	Fiche
DO THE REDSHIFTS OF GRAVITATIONAL LENS GALAXIES RULE OUT A LARGE COSMOLOGICAL CONSTANT? <i>Christopher S. Kochanek</i>	1	1-A11
CHARGED PARTICLE CREATION IN THE STEADY STATE UNIVERSE <i>Richard L. Liboff</i>	12	1-B10
RELAXATION-DRIVEN BINARY MERGERS <i>Sergio Gelato, David F. Chernoff, &amp; Ira Wasserman</i>	15	1-C1
STATISTICAL TESTS OF PEAKS AND PERIODICITIES IN THE OBSERVED REDSHIFT DISTRIBUTION OF QUASI-STELLAR OBJECTS <i>Debiprosad Duari, Patrick Das Gupta, &amp; Jayant V. Narlikar</i>	35	1-D9
STELLAR POPULATION-INDUCED PECULIAR VELOCITIES OF ELLIPTICAL GALAXIES <i>Michael D. Gregg</i>	43	1-E5
THE FORMATION OF GLOBULAR CLUSTERS IN MERGING AND INTERACTING GALAXIES <i>Keith M. Ashman &amp; Stephen E. Zepf</i>	50	1-F1
EXOSAT X-RAY SPECTRA OF QUASARS <i>Andrea Comastri, Giancarlo Setti, Giovanni Zamorani, Martin Elvis, Paolo Giommi, Belinda J. Wilkes, &amp; Jonathan C. McDowell</i>	62	1-G1
<sup>13</sup> CO IN IC 342: EVIDENCE FOR A SPIRAL DENSITY WAVE IN THE NUCLEUS <i>Jean L. Turner &amp; Robert L. Hurt</i>	72	1-G13
DETECTION OF A LARGE-SCALE STELLAR BAR IN THE MILKY WAY <i>Martin D. Weinberg</i>	81	2-A10
AMBIGUITIES IN THE IDENTIFICATION OF GIANT MOLECULAR CLOUD COMPLEXES FROM LONGITUDE-VELOCITY DIAGRAMS <i>David S. Adler &amp; William W. Roberts, Jr.</i>	95	2-B12
LOCAL DISTRIBUTION OF OLD NEUTRON STARS <i>Zsolt Frei, Xiaolan Huang, &amp; Bohdan Paczyński</i>	105	2-C10
SELF-ORGANIZATION OF COSMIC RADIATION PRESSURE INSTABILITY. II. ONE-DIMENSIONAL SIMULATIONS <i>Craig J. Hogan &amp; Jorden Woods</i>	111	2-D4
ACCRETION FLOWS NEAR BLACK HOLES MEDIATED BY RADIATIVE VISCOSITY <i>Abraham Loeb &amp; Ari Laor</i>	115	2-D10
THERMAL STRUCTURE OF NEUTRON STARS WITH VERY LOW ACCRETION RATES <i>J. L. Zdunik, P. Haensel, B. Paczyński, &amp; J. Miralda-Escudé</i>	129	2-E12
COMPTON SCATTERING IN A CONVERGING FLUID FLOW: SPHERICAL NEAR-CRITICAL ACCRETION ONTO NEUTRON STARS <i>Apostolos Mastichiadis &amp; Nikolaos D. Kylafis</i>	136	2-F7
THE FATE OF ACCRETED CNO ELEMENTS IN NEUTRON STAR ATMOSPHERES: X-RAY BURSTS AND GAMMA-RAY LINES <i>Lars Bildsten, Edwin E. Salpeter, &amp; Ira Wasserman</i>	143	2-G1
THE FORMATION OF CORONAL REGIONS IN ACCRETION DISKS <i>Stephen D. Murray &amp; Douglas N. C. Lin</i>	177	3-B9
THE ZEEMAN EFFECT IN ASTROPHYSICAL WATER MASERS AND THE OBSERVATION OF STRONG MAGNETIC FIELDS IN REGIONS OF STAR FORMATION <i>Gerald E. Nedoluha &amp; William D. Watson</i>	185	3-C5

	Page	Fiche
AN INFRARED STUDY OF THREE WOLF-RAYET RING NEBULAE <i>J. S. Mathis, J. P. Cassinelli, K. A. van der Hucht, T. Prusti, P. R. Wesselius, &amp; P. M. Williams</i>	197	3-D5
MULTIPLICITY AMONG THE YOUNG STARS IN TAURUS <i>M. Simon, W. P. Chen, R. R. Howell, J. A. Benson, &amp; D. Slowik</i>	212	3-E8
A MAGNITUDE-LIMITED SURVEY OF CEPHEID COMPANIONS IN THE ULTRAVIOLET <i>Nancy Remage Evans</i>	220	3-F4
ON THE CERTIFICATION OF AM CANUM VENATICORUM AS A CATAclysmic VARIABLE <i>Joseph Patterson, Emily Sterner, Jules P. Halpern, &amp; John C. Raymond</i>	234	3-G6
A REANALYSIS OF THE ORBITAL INCLINATION OF CYGNUS XR-1 DETERMINED POLARIMETRICALLY <i>Joseph F. Dolan</i>	249	4-A9
IS THERE A RECYCLED OLD PULSAR IN CYGNUS X-3? <i>Abhas Mitra</i>	255	4-B3
TIME VARIATIONS IN THE X-RAYS FROM CYGNUS X-3 OBSERVED WITH GINGA <i>Shunji Kitamoto, Seiko Mizobuchi, Koujun Yamashita, &amp; Hiroshi Nakamura</i>	263	4-B13
DISK INSTABILITY AND OUTBURST PROPERTIES OF THE INTERMEDIATE POLAR GK PERSEI <i>Soon-Wook Kim, J. Craig Wheeler, &amp; Shin Mineshige</i>	269	4-C7
LINE SHAPES OF ROTATING STARS WITH APPLICATION TO ALPHA LYRAE <i>G. H. Elste</i>	284	4-D10
NH <sub>3</sub> AND NH <sub>2</sub> IN THE COMA OF COMET BRORSEN-METCALF <i>Stephen C. Tegler, Luke F. Burke, Susan Wyckoff, Maria Womack, Uwe Fink, &amp; Michael DiSanti</i>	292	4-E6
METHANE BAND PHOTOMETRY OF THE FADED SOUTH EQUATORIAL BELT OF JUPITER <i>Takehiko Satoh &amp; Kiyoshi Kawabata</i>	298	4-F1
QUASI-STATIC EVOLUTION OF CORONAL MAGNETIC FIELDS <i>D. W. Longcope &amp; R. N. Sudan</i>	305	4-F12
THE THEORY OF MAGNETOHYDRODYNAMIC WAVE GENERATION BY LOCALIZED SOURCES. III. EFFICIENCY OF PLASMA HEATING BY DISSIPATION OF FAR-FIELD WAVES <i>William Collins</i>	319	5-A1
MAGNETOHYDRODYNAMIC EQUILIBRIA AND CUSP FORMATION AT AN X-TYPE NEUTRAL LINE BY FOOTPOINT SHEARING <i>G. E. Vekstein &amp; E. R. Priest</i>	333	5-B3
ENERGETICS AND DYNAMICS IN A LARGE SOLAR FLARE OF 1989 MARCH <i>Jean-Pierre Wülser, Dominic M. Zarro, &amp; Richard C. Canfield</i>	341	5-B13
LINEAR RESISTIVE MAGNETOHYDRODYNAMIC COMPUTATIONS OF RESONANT ABSORPTION OF ACOUSTIC OSCILLATIONS IN SUNSPOTS <i>Marcel Goossens &amp; Stefaan Poedts</i>	348	5-C8
NEW INFORMATION ON SOLAR ACTIVITY, 1779-1818, FROM SIR WILLIAM HERSCHEL'S UNPUBLISHED NOTEBOOKS <i>Douglas V. Hoyt &amp; Kenneth H. Schatten</i>	361	5-D9
LEVEL POPULATIONS FOR Fe III APPLICABLE TO ASTROPHYSICAL PLASMAS AND A COMPARISON WITH PLANETARY NEBULA OBSERVATIONS <i>F. P. Keenan, K. A. Berrington, P. G. Burke, C. J. Zeippen, M. Le Dourneuf, &amp; R. E. S. Clegg</i>	385	5-F7

1992 JANUARY 10, Number 2

COSMOLOGICAL EXPLOSIONS FROM COLD DARK MATTER PERTURBATIONS <i>Robert J. Scherrer</i>	391	7-B1
THE DISTRIBUTION OF GALAXIES WITHIN THE "GREAT WALL" <i>Massimo Ramella, Margaret J. Geller, &amp; John P. Huchra</i>	396	7-B7

# CONTENTS

v

	Page	Fiche
THE DISTRIBUTION OF NEARBY RICH CLUSTERS OF GALAXIES <i>Marc Postman, John P. Huchra, &amp; Margaret J. Geller</i>	404	7-C1
ELLIPTICAL GALAXIES WITH DARK MATTER. I. SELF-CONSISTENT MODELS <i>G. Bertin, R. P. Saglia, &amp; M. Stiavelli</i>	423	7-D9
ELLIPTICAL GALAXIES WITH DARK MATTER. II. OPTIMAL LUMINOUS-DARK MATTER DECOMPOSITION FOR A SAMPLE OF BRIGHT OBJECTS <i>R. P. Saglia, G. Bertin, &amp; M. Stiavelli</i>	433	7-E7
PRIMORDIAL GAUSSIAN PERTURBATION FIELDS: CONSTRAINED REALIZATIONS <i>Yehuda Hoffman &amp; Erez Ribak</i>	448	7-F9
THE RADIO TIME DELAY IN THE DOUBLE QUASAR 0957 + 561 <i>J. Lehar, J. N. Hewitt, D. H. Roberts, &amp; B. F. Burke</i>	453	7-G1
THE ORIGIN OF THE OPTICAL EMISSION LINES ASSOCIATED WITH EXTRAGALACTIC RADIO SOURCES <i>S. M. Viegas &amp; E. M. de Gouveia Dal Pino</i>	467	8-A1
DARK MATTER IN NGC 4472 <i>Michael Loewenstein</i>	474	8-A9
X-RAY SPECTRAL VARIABILITY OF THE SEYFERT I GALAXY NGC 4051 <i>Hideyo Kunieda, Satio Hayakawa, Yuzuru Tawara, Katsuji Koyama, Sachiko Tsuruta, &amp; Karen Leighly</i>	482	8-B5
THE ORBITAL STRUCTURE OF GALACTIC HALOS <i>Joanna F. Lees &amp; M. Schwarzschild</i>	491	8-C1
MICROFLARE HEATING OF THE GALACTIC HALO <i>John C. Raymond</i>	502	8-D1
ABUNDANCES OF THE HEAVY ELEMENTS IN THE MAGELLANIC CLOUDS. III. INTERPRETATION OF RESULTS <i>Stephen C. Russell &amp; Michael A. Dopita</i>	508	8-D9
DENSE CORES IN DARK CLOUDS. VII. LINE WIDTH-SIZE RELATIONS <i>G. A. Fuller &amp; P. C. Myers</i>	523	8-F1
THE MOLECULAR CORE IN THE AFGL 5157 REGION <i>José M. Torrelles, Carlos Eiroa, Rainer Mauersberger, Robert Estalella, Luis F. Miranda, &amp; Guillem Anglada</i>	528	8-F7
0.8-1.6 MICRON SPECTROSCOPY OF THE PLANETARY NEBULA NGC 7027 <i>Richard J. Rudy, Peter Erwin, George S. Rossano, &amp; R. C. Puetter</i>	536	8-G1
MULTIPLE RESONANT SCATTERING IN THE COMPTON UPSCATTER MODEL OF GAMMA-RAY BURSTS <i>J. J. Brainerd</i>	545	9-A1
ANGULAR MOMENTUM AND BLACK HOLE FORMATION IN STELLAR SYSTEMS: A STATISTICAL APPROACH <i>Fernando de Felice, Yunqiang Yu, &amp; Guorong Zhou</i>	560	9-B5
THE EFFECTS OF RADIATION DRAG ON RADIAL, RELATIVISTIC HYDROMAGNETIC WINDS <i>Zhi-yun Li, Mitchell C. Begelman, &amp; Tzihong Chiueh</i>	567	9-C1
ON MASS-TRANSFER RATES IN CLASSICAL NOVA PRECURSORS <i>Icko Iben, Jr., Masayuki Y. Fujimoto, &amp; Jim MacDonald</i>	580	9-D1
SPHERICALLY SYMMETRIC, POLYTROPIC FLOW <i>T. Theuns &amp; M. David</i>	587	9-D9
DYNAMICS OF THE ENVELOPES OF Be STARS IN THE EQUATORIAL PLANE <i>Haiqi Chen, J. M. Marlborough, &amp; L. B. F. M. Waters</i>	605	9-F1
Fe II EMISSION LINES. II. EXCITATION MECHANISMS IN COOL STARS <i>P. G. Judge, C. Jordan, &amp; U. Feldman</i>	613	9-F10
DETERMINATION OF THE VISUAL ORBIT OF THE SPECTROSCOPIC BINARY $\alpha$ ANDROMEDAE WITH SUBMILLIARCSECOND PRECISION <i>Xiaopei Fan, Michael Shao, M. Mark Colavita, J. Thomas Armstrong, David Mozurkewich, Maddali Vivekanand, Craig S. Denison, Richard S. Simon, &amp; Kenneth J. Johnston</i>	624	9-G9
A VLA 3.6 CENTIMETER SURVEY OF N-TYPE CARBON STARS <i>Donald G. Luttermoser &amp; Alexander Brown</i>	634	10-A7
SUBSURFACE EMISSIONS FROM MERCURY: VLA RADIO OBSERVATIONS AT 2 AND 6 CENTIMETERS <i>Michael J. Ledlow, Jack O. Burns, Galen R. Gisler, Jun-Hui Zhao, Michael Zeilik, &amp; Daniel N. Baker</i>	640	10-B1

	<i>Page</i>	<i>Fiche</i>
MULTIFREQUENCY OBSERVATIONS OF A REMARKABLE SOLAR RADIO BURST <i>S. M. White, M. R. Kundu, T. S. Bastian, D. E. Gary, G. J. Hurford, T. Kucera, &amp; J. H. Bieging</i>	656	10-C5
ERRATA		
GRAVITATIONAL CLUSTERING IN THE EXPANDING UNIVERSE: CONTROLLED HIGH-RESOLUTION STUDIES IN TWO DIMENSIONS <i>John Francis Beacom, Kurt G. Dominik, Adrian L. Melott, Sam P. Perkins, &amp; Sergei F. Shandarin</i>	665	10-D1
SIX BALMER-DOMINATED SUPERNOVA REMNANTS <i>R. Chris Smith, Robert P. Kirshner, William P. Blair, &amp; P. Frank Winkler</i>	665	10-D1

